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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,152	08/12/2002	Stephen John Russell	2308/300	2927

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EXAMINER	
KIM, SUN U	
ART UNIT	**PAPER NUMBER**
1723	

DATE MAILED: 02/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/088,152	RUSSELL ET AL.	
	Examiner	Art Unit	
	John Kim	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 August 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/12/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 3,768,118 (hereinafter referred to as Ruffo et al.). Ruffo et al teach a process for the manufacture of an air filtration medium (see col. 15, lines 7-19) comprising the steps of transferring uncharged fibers (310, 335) to an air-laying apparatus, air-laying the fibers onto a support i.e. mesh screen conveyor (381) so as to form a non-woven web in the form of a single layer and drawing the web from the support (381) (see figure 1-11; col. 4, line 43 – col. 12, line 65; col. 16, line 41 – col. 19, line 30; col. 21, line 58 – col. 23, line 50)(claims 1 and 4) wherein the air-laying apparatus comprises a rapidly rotating cylinder or roller clothed with teeth (312, 337) (claim 2) interacting with other toothed rollers (317, 338) (claim 3) and a blend of fibers of two or more fibers are dispersed in a moving air stream to form an air fiber mixture in a mixing zone (334) (see figure 1; col. 18, lines 38-43)(claims 5-6). The subject matter of independent claim 1 seems at first glance to be distinguished from the prior art by the feature "electrostatically-charged". The present application does not give any advices how to charge the fibers electrostatically by respective independent

process steps. Studying the present description with regard to this feature the reader learns only that "Electrostatic charging of the fibres is believed to be achieved as the fibres are separated between a set of feed rollers and a single roller, or as they are contacted by the rotors and mesh yarns of the grid". If the electrostatic charge is a consequence of the two described examples of air laid processes of the present application, also the fibers of the prior art air laid processes in Ruffo et al are charged during the air-laying process. Thus there is in fact no difference between the air-laying process of Ruffo et al and the air-laying process according to claim 1.

4. Claims 15-17 and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Ruffo et al. Ruffo et al teach a single layer of non-woven web comprising a mixture of pulp fibers and staple rayon fibers and having a ratio of the tensile strengths (MD/CD) of about 1:1 and a weight of approximately 1,400 grains per square yard i.e. about 108 grams per square meter in one example (see col. 22, line 56 - col. 23, line 50). The weight of known fabrics are about 4,000 grains or more per square yard i.e. about 309 grams per square meter (see col. 1, lines

5. Claims 15-16 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,582,907 (hereinafter referred to as Pall). Pall teaches a single layer of non-woven web comprising fibers ranging in average fiber diameters to about 2 microns or less (see abstract) and having a ratio of the tensile strengths (MD/CD) of about 1:4 (see col. 12, lines 52-61).

6. Claims 7-14, 18-25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruffo et al as applied to claims 1, 6, 15, 17 above in paragraphs 3-4, and further in view of UK Patent Application No. GB 2190689 A (hereinafter referred to as GB '689). Ruffo et al

teach the method of forming the non-woven web as air filtration medium and the characteristics of the web as described in above paragraphs 3-4. Ruffo et al further teach that a choice of fibers used will depend on the desired characteristics of the product as well as its utility and recites staple fibers including polyvinyl chloride fibers, polyolefin fibers such as polyethylene and polypropylene (see col. 10, lines 7-68). Claims 7-14 and 18-28 essentially differ from the method and non-woven web of Ruffo et al in reciting specific characteristics of fibers. GB '689 teaches a filter material for air filtration medium (see col. 1, lines 5-23) comprising a blended fibers of component (a) polypropylene and component (b) polyvinylchloride or polyvinylidene chloride (see col. 1, lines 28-43)(claims 7-8, 18-19, 28) wherein the blend further comprises a modacrylic copolymer comprising from 35 to 85 weight percent acrylonitrile units and having the balance made up substantially of other addition polymer-forming units being halogenated hydrocarbon such as vinyl chloride or vinylidene chloride (see col. 1, lines 47-53) (claims 9, 20), and the weight ratio of component (a) to component (b) is in the range of 70:30 to 30:70 (see col. 1, lines 67-69) (claims 10-11, 21-22), and the density of the polypropylene fibers is 2.8 decitex and the density of modacrylic fibers is 3.5 decitex wherein the weight proportion of polypropylenes to modacrylic fibers is 60 to 40 such that the density of fibers is less than 3.3 dtex (see col. 1, line 97 – col. 2, line 4) (claims 12-13, 23-24), and the fibers are preferably from 10 to 25 microns (see col. 1, lines 70-74) (claims 14, 25), and the choice of fiber diameter is finally governed by the purpose for which the filter is intended, but it is likely that the most useful will be made from the finest fibers that can be carded without any difficulty (see col. 2, lines 39-46). It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to utilize known filter material for air filtration as in GB '689 in the method of Ruffo et al to arrive at the claimed non-woven web for desirable air filtration property.

7. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to **a single paragraph on a separate sheet** within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

New abstract is required.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References cited in USPTO 892 form shows the current state of the art in making nonwoven web. Particularly, U.S. Patent No. 6,090,469 teaches that the staple fibers are electrical activated during the fiber formation process, such as by the mechanical action of carding or by other web formation processes such as air laying or co-rotating dual rollers with metallic teeth (see col. 6, lines 15-21).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is (571) 272-1142. The examiner can normally be reached on weekdays from 7:00 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (571) 272-1151. The fax phone number for official response is (703) 872-9306.

When sending a draft amendment by fax, please mark the paper as "DRAFT"; otherwise, mark the paper "OFFICIAL". This will expedite the processing of the paper.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

John Kim
Primary Examiner
Art Unit 1723

J. Kim
February 20, 2004